

Fitness Improvement Requires Stress & Cortisol | Dr. Andy Galpin & Dr. Andrew Huberman

What I think it can be useful for people to understand is that many things will spike cortisol throughout the day stress cold water exercise But the idea is that it comes down to baseline or near baseline Um rather quickly One of the worst situations as you pointed out is when the highest level of cortisol is consistently shifted to the afternoon period In fact that's a um pretty reliable signature of certain forms of depression This is worked by uh my colleague David Spiegel at Stanford Psychiatry and the the Great Bob Sapolsky Robert Sapolsky of uh why zebras don't get ulcers behave et cetera and fame Lots of lots of popular books there Um I think that if people are trying to regulate their cortisol and they're just under and they just understand that basic contour that the baseline should be uh you know rise pretty quickly after one rises in the morning So it's easy to remember rise rise um rise out of bed and rise cortisol with light um bright light with exercise um with caffeine these things will all increase cortisol and then across the day it's normal for cortisol to spike But then to use some of the down regulation methods that you described in particular the breathing methods and exercise itself as the case may be But then to really pay attention to how much psychological and physical stress is occurring in the six hours or so or eight hours prior to sleep Um Does that seem like a a good sort of broad contour of how to have a healthy pattern of cortisol release Because you actually want the cortisol to reduce inflammation and initiate or participate in the recovery process You will not see any progress from exercise training without a large spike in cortisol It is critically important when we think of phrases like cortisol inflammation stress This is not bad right Physiology is not personified right there The things don't like hu in the body right It is all is not good and bad They just are um the more you try to suppress cortisol the more you suppress adaptation what you want is exactly what you mentioned large spikes met with large quick recovery and you wanna do that throughout the day and get that hor metic stressor This is so going back to your Owa Ganda and Rodela issue Um it I think it would be very short sighted for people to do that as this is a prophylactic Ok Because you if you blunt cortisol you're going to cause immunosuppressant especially early in the day Totally taking before going to train is is counterproductive Yeah We we do not just this is not a baseline part of our foundational

package right If you go look at the um athlete foundations or the athlete resilience protocols that put together you're not going to see these things in there for that specific reason Um Any form of cortisol regulation needs to be done strategically if you are excessively high and we're bringing you back down the normative values at the right time then great If you're normal though then taking you down lower than that is actually problematic The same thing is actually true since we're here for oxidative stress foreign information antioxidant use Um We mentioned I think earlier about taking vitamin C and vitamin E post exercise will actually blunt out of patients or at least it has the potential to do so same thing right If you're modulating this response just because and you have not done so because of uh actually biological testing that indicated you needed to do such then you actually may be making things worse And so um we we see this constantly with people who take a number of supplements and substances for sleep and then they wake up the next morning groggy and your your cortisol suppressed Ok great So then they take something for stimulation and then the rest of the day they're trying to reduce and then you know this nasty cycle instead of just getting out of the way and letting cortisol do what it's supposed to do Uh and then making sure again you're teaching it So this is actually a coachable response You can coach your own body to go down in the later part of the day and go up in the earlier part of the day I mean you want to make sure that you are driving that train with intent And so again to reiterate if you don't need that you shouldn't do it right If you don't need to lower cortisol you shouldn't walk around doing it you're just going to suppress the state even far And this is what's needed this is needed for anabolic responses So you're not going to grow muscle If cortisol is not spiked it's it's going to compromise it rather So you wanna be intentional with these practices uh especially in the form of of supplementation be very very intentional I've heard it said that carbohydrates in particular starchy carbohydrates can inhibit cortisol And uh this could be through the uh tryptophan amino acid related pathway that ratchets up to uh serotonin release Probably some other things too I mean the idea that carbohydrates just stimulate serotonin is is a little bit uh overly simplistic A MP K going up and immediately turning it on there Yeah Right So um you know I think we've all experienced this uh you know we're stressed we're stressed we uh it doesn't necessarily even have to be highly processed you know uh fat asso you know fatty carbohydrates Um you know like potato chips and and potato chips and dip or these kinds of things It can also be a bowl of rice a bowl of oatmeal a bowl of pasta Um

which here I'm not trying to demonize um carbohydrates I I do ingest carbohydrates um minimally or Nonprocessed carbohydrates Um most of the time but not all the time And they have a a fairly potent uh effect on on lowering stress and perceived stress and even quality of sleep which is not to say that somebody has to load up on them like crazy unless their glycogen is really depleted We talked a lot about this in the endurance episode I know we'll touch on more in the nutrition supplementation episode But um in thinking about the relationship between carbohydrates and cortisol and what we've just been talking about in terms of cortisol as being vitally important for the adaptation trigger or triggering adaptation It's probably a better way to put it but that it can blunt cortisol taking post training or um maybe in the evening before sleep What are some of the basic ways that one can think about and maybe use carbohydrates in specific ways in order to let's say control cortisol rather than uh quash Cortisol Uh you actually have alluded to it a number of times already So we oftentimes will give people a lot of carbohydrates at night Um for some of these reasons um You're going to feel fantastic A lot of people it helps you sleep Um both get to sleep and stay asleep sleep quality you talked about specifically remember think about it this way cortisol at its core is an energy signaling molecule It says we are in the need for energy Great Um Epinephrine is the same way you you'll start seeing for example cortisol will liberate uh free fatty acids put them in the bloodstream get you prepared to do something The problem is if it's continually elevated throughout the day with no down regulation we start running into issues right So again this is the differentiation between all my cortisol is slightly elevated all day versus I had a really big big spike after training I had a really big spike after breath protocol et cetera and then it went back down So that being said if you then ingest carbohydrates you were telling it is quick to see the signal We have nutrients we have energy again specifically carbohydrates Therefore Cortisol can sort of go back down We don't need to be liberating free fatty acids and preparing uh the need for fuel So you can help yourself go to sleep For many as you pointed out many mechanisms actually why carbohydrates will help you sleep at night Um for some not all people but some that would be one of the relationships it has with cortisol